

especially about the fingers, ran rapidly into deep-seated inflammations. A miasmatic constitution of the atmosphere is particularly favourable to the formation of whitlows. I treated these by deep incisions, and generally, some hours after, sprinkled the part over with calomel; but the first incisions scarcely ever proved sufficient; the suppuration would extend beyond them. The pain of these whitlows will take on regular remissions.

ART. II.—*Account of a Blighted Fetus of the third month, having the umbilical cord extensively coiled around the right knee and lower third of the thigh, discharged with a living child at full term: with some reflections connected with the questions of Superfetation and Spontaneous Amputation.* By A. LOPEZ, M.D. (Read before the Medical Society of Mobile, Alabama, May 6, 1845.)

I PRESENT to the society this evening, a specimen of a *Blighted Fetus*, whose history is as follows :

Louisa, a coloured woman, the mother of other children, was delivered by a midwife on the 10th March, 1839, of a *healthy living child* of perfect development, and at the full term of gestation. On Tuesday the 12th, I was summoned in great haste, and on my arrival found the conclave of old women terribly astounded by the discovery of a new subject, which had been thrust aside unobserved, on the day of parturition, among the soiled clothing and discharges from the uterus. Upon examination, it proved to be the specimen which I now exhibit. To all appearances it had attained its *4th month*, although it is with difficulty that we can accurately specify the early fetal age, owing to the uncertainty as to the time of conception, and because, we all know how much the growth of different fetuses varies. The skull is so entirely compressed as to expand its proportions and bring the opposite parietal surfaces in close contact. The entire body is likewise much distorted and flattened, doubtless from the pressure exercised upon its plastic nature by the uterus and the other child, for so long a period prior to its expulsion. There is not the slightest decomposition, and its aspect was even less unfavourable, before it had undergone such long maceration in the alcohol, necessary for its extra-uterine preservation. The membrane which you see was found separately discharged. I obtained no information concerning the placenta, but an additional interest is afforded to the case, from the fact, that the *umbilical cord, no larger than a small thread, will be seen entwined around the right knee and the lower third of the thigh.* It was much more so when I first possessed the specimen, but on its transportation from South Carolina to this place, the bottle was broken, the spirit evaporated and the entire surface covered with a thick mould, so

that in my effort to clean it, the upper portion of the cord from the umbilicus to its attachment upon the thigh was unavoidably detached. I have said that this circumstance added interest to the case, and I so consider it, because, independent of other physiological questions to which such sports of nature give rise, and to which I shall presently refer, there is superadded, the problem of what some writers denominate "*spontaneous amputation*" in utero, from this condition of the cord as well as from other causes purely hypothetical. The upper extremities are very much deformed and displaced by the pressure, so that the left shoulder (with its scapular connections) is entirely twisted over the back of the neck, giving it the appearance of arising from the same origin with the right.

I have given you the history—and you have the specimen for examination. Perhaps, in the true spirit of medical philosophy, as well as the common sense view of the question, it would be wise to leave it at this stage of its notoriety—because, to take one step further in speculation, is neither more nor less than to plunge into the same limitless, unfathomable sea of uncertainty, in which the ablest and most ingenious minds have invariably been lost, whenever they have attempted to solve the enigma of conception and generation. "Man is fearfully and wonderfully made" are the words of the inspired man of God, and he did no more than declare a truism, derived from the first incomprehensible creation of our race out of the "dust of the earth," to the present day, at which the same creative will, of the same Omnipotence, sends forth his creatures to fill the globe through the instrumentality of animal copulation. Trace this wonderful problem from the most insignificant mite, that owes its brief tenure of existence to equivocal generation, up through the almost endless chain, to *Man!* and say how much wiser are we now for all the labour of the mightiest intellects—the war of words—the rancour of controversy, and the arrogance of short-lived dogmas to which this high and as yet intangible question has been subjected? We breathe, we cry, we feed and perish! This is the sum total of our knowledge, and it is all we are likely to know of how a child is begotten, developed or perfected, because it is self-evident that it is the pleasure of the Creator, in his wisdom, to conceal what he listeth from our scrutiny.

Yet aware of all that I have said, I must be pardoned for trespassing upon your time, as I desire to submit to the society a few remarks upon four subjects collaterally belonging to the specimen now upon your table.

First. Is it a blighted fœtus of one conception?

Secondly. Can a dead fœtus be retained to full term with a living one?

Thirdly. Is this an instance of superfœtation?

Fourthly. What would have been the chances for spontaneous amputation had the fœtus progressed to maturity with the present condition of the umbilical cord?

These are all questions of laudable curiosity—nothing more; because, grant that we ever should, by the triumph of intellectual industry, tread

the labyrinth in which they are now concealed—*cui bono*? The discovery could not avert the issue, it could not abate one jot of human suffering, nor could it shed one additional ray of lustre upon those immutable truths of physiology, pathology or chemistry, whose results are *practically* applicable to everyday purposes. This is the age of utilitarianism, and unless I am much deceived, we are every day completing its ascendancy over the incitements to man's industry and ambition. The people now demand servants—they are tired out with philosophers.

Let us revert, then, to our first question—*Is it a blighted fetus of one conception.*

I cannot consent to settle this either too summarily or presume to do it too definitely, inasmuch as other circumstances of an imposing character oppose such peremptory decisions. But in advance of further inquiry it may not be amiss to establish the fact that the discharge of *blighted fetuses* is not of unusual occurrence, and that they do occur, both alone and simultaneously with others more mature. To the former class I shall for the present confine myself and I refer the society to the records of such similar cases as I have from 1839 to the present time collected. I will endeavour to condense their histories as much as possible.

1. The *Chevalier Galbiati*, in a communication to the *Med. Chir. Society of Naples*, Nov. 29, 1834, states that cases where the fetus dies during utero-gestation and is retained to the full term, are not uncommon. He therefore reports the following. (*Gaz. Méd. de Paris*, Aug. 1835, from *Observ. Medico.*)

(a) The *Marchioness of M.* was affected during the 4th, 5th and 6th months of pregnancy with moderate discharges of blood from the womb. At the 4th month, the uterus was of equal volume as at the third. At the 6th the same as at the 5th, but less than at the 3d. During the 7th month hemorrhages more abundant, followed by pains and the *expulsion of a fleshy, fresh organized body* in which was contained a *fetus shrunk and atrophied as if plunged in alcohol, apparently not over two months old.*

(b) The *wife of the Chevalier M.*, in the third month of gestation, fell from a carriage; slight hemorrhage; no pain; by proper means abortion prevented. She proceeded to the 5th month increasing in volume. At the 6th month the uterus opened, accompanied with hemorrhage. Size scarcely equal to the 3d month: pregnancy doubted. At 7th month, another flow, but there being no sensible development, he concluded against pregnancy. At the 8th month she was allowed to resume ordinary diet, hitherto forbidden through fear of abortion. Undue indulgence produced another hemorrhage, resulting in the *expulsion of a shriveled fetus about three months old.*

(c) *La Marchesina G*—examined a short time previously to the 3d month, pronounced pregnant; increased to the 4th and 5th month. At the 6th month, traces of blood, and the uterus of less size than at the third. It was therefore decided that pregnancy had ceased to progress. At the 7th month hemorrhage and *expulsion of a fetus, as large as the fruit of an almond, supposed to be less than three months old.*

2. Dr. Porter, of New London; Connecticut, reports a case of retention

of a dead fœtus in utero from the 5th month, and its expulsion at full term. *It was free from putrefaction.*

3. *Dr. Hays*, Editor of the *Amer. Jour. Med. Sci.*, reports in that periodical (Aug. 1837, p. 535) the case of a fœtus blighted between 3 and 4 months old, expelled at full term, *entirely free from putrefaction*, the umbilical cord several inches long, and as *small as a thread*. Nine months antecedently the mother conceived; ceased to menstruate, and suffered all the attendant circumstances of conception. About the period of quickening flooded profusely; this ceased; she progressed and quickened, after which the breasts became flaccid, her size diminished, and she carried the fœtus to full term.

4. In the *Lond. and Ed. Monthly Jour. of Med. Sci.*, for October, 1841, is reported a case taken from *Journ. de Chir. et de Med. Prat.*, for May, 1841, in which *Dr. Brett* of Guingamp, relates an instance of *delivery at full term of a fœtus dead 4 months previously*. It was six inches long, skin rather reddish; *epidermis not removed by friction*; it appeared to be 5 months old.

These facts demonstrate that the human embryo is frequently from some cause, blighted or arrested in its progress towards a perfect and mature development, and that notwithstanding its privation of those elements essential to its well-being, or, as the French would express it, "*faute d'aliment*," it still can be retained in the uterus, and preserved from the decomposition incident to all dead matter, whether animal or vegetable. And it is further proved, that this organ of exquisite sensibilities and diffusive sympathies—which feels itself (so to speak) called upon to dislodge all offensive and foreign substances, ay, even its own nurtured offspring, whenever its innate susceptibilities notify it of the necessity—encourages the presence of a substance whose extinguished vitality, one would suppose, might prove not only a source of irritation to itself, but prejudicial to the integrity of the healthy and living fœtus. How and why is this? I shall, before I conclude this paper, be compelled to refer to its solution, but with the faintest of all faint hopes of success.

I now pass to the next branch of the subject:—*Can a dead fœtus be retained to full term with a living one?* The specimen now on your table answers affirmatively. Is this an isolated case, or are they not rather of frequent occurrence? I will offer no apology for consuming your time with the details of such analogous cases as I have from time to time harvested, for my own instruction. The case then is not isolated, nor of rare occurrence, where a *fœtus blighted at early age is retained and expelled at full term with a living child*.

Dr. Defermon, of Paris, communicated to the *Med. Soc. of Emulation*, a case where the first child was born healthy and well developed, and with a perfect placenta, to which there adhered a mass which proved to be a second child with its secundines. It was a *flattened fœtus* apparently arrested at the third month. The mother thinks the duration of her pregnancy was ten and a half months. (*Bulletin des Sci. Méd.*, July, 1829.)

Dr. Colombe delivered a woman in 1827, naturally, at full time. The placenta attracted his attention—it was divided into two distinct parts,—

very different in their volumes and anatomical relations. The membranes of the defective placenta were entire and contained a fœtus apparently four months old, deformed and flattened, skin shriveled, pale, and slightly livid.

N. B. About the third month the mother was much fatigued and suffered from anorexia, pains in the abdomea, hips and pelvis. (*Oper. cit.*)

Dr. Ingleby, Lecturer on Midwifery, &c.,—favourably known as the author of an excellent work, entitled "*Facts and Cases in Obstetrical Medicine, &c.*" reports in that work the following account: In a case of pregnancy a healthy placenta was expelled by hemorrhage. In the membrane adherent to the uterine surface, there was found a four months fœtus enclosed within its membranes. It was flattened but not putrid, and in connection with the same plucenta there had just been expelled a healthy, full sized child.

In the *London Lancet*, Oct. 30, 1841, Dr. Streeter relates a case to the Westminster Med. Soc., as occurring in the practice of Dr. Hughes. One fœtus was alive at full term, the other blighted, having perished apparently at the third month—consequently retained nearly six months after its death. It was probably expelled during the labour a few minutes before the placenta. It had undergone very little decomposition and was squeezed quite flat.

Collins, (*Practical Midwifery*, p. 317,) records three cases where one fœtus was blighted at an early period and retained until the other was nearly or completely developed.

Cruveilhier (*Anatomie Pathologique*) relates one case.

The most remarkable case, however, of any that has met my eye, is recorded by Dr. Robert Lee, who saw a case of triplets, two of which perished at the third or fourth month, were retained to the full term of gestation and then expelled, attached to the placenta of a living child.

M. Menard, of Naates, relates (*Lond. and Edin. Monthly Journ. of Med. Sci.*, Oct., 1841, from *Journ. de Loire Infer.*) the birth of one fœtus five months old, dead and atrophied, the other, living, healthy, and at full term. The first he describes as "putrilage cremeux," in detached pieces, the remainder of which had finally to be extracted by the fingers, in one dry, soft, and flattened mass. Two hours afterwards a healthy, living child was born.

Dr. Perkins, of New London, in a letter to Dr. Porter, May 16th, 1840, relates as follows. On the 18th April, 1840, he delivered a woman of a healthy male child, full term, weight nine pounds, the patient did well. That night she expelled a fœtus enveloped in the membranes; it was between four and five months old, entirely undeveloped, of natural colour, perfect in form for that age, except the head, which was compressed.

Mauriceau (*Dis. of Women with Child, &c.*, Ed. 1688, p. 44,) gives the case of a young woman delivered at the usual term of two children, one of ordinary size, the other dead, in third or fourth month of its age.

These instances, for the present, conclude the second division of my subject, and serve to exhibit one of the irregularities likely to occur in the function of an organ in which we would expect *à priori*, to find an uninterrupted chain of cause and effect, and from here we proceed to our next inquiry, viz.—

Is the specimen before you a case of Superfœtation?

In order even to approach a satisfactory hypothesis we must be content to take an infinite number of questionable propositions for granted, else, groping as we do, with our eyes hoodwinked, the further we proceed the worse would confusion become confounded.

It were profitless to call your attention to the various theories, which, ingenious and short-lived, gave place to one another through each cycle of human speculation. Yet it may be well to defer further consideration for a while, and summarily inquire what is understood by *superfetation*.

As early as the time of *Hippocrates* he defined it to be "*a reiterated conception, when a woman being already with child, conceives again the second time.*" Passing down from that epoch to the most recent understanding of the question, we reach the definition given by *Mr. Guy*, in his late valuable work on "*Medical Jurisprudence*," who calls it "*The conception of the second embryo, during the gestation of the first, the products of the two distinct conceptions being born, either at the same, or at different times.*" (p. 109.) Thus we perceive that these two definitions differ only in phraseology, but are identical in substance, so that there exists no difference in the meaning of the term through this vast interval of time, however the learned may have disputed *ad interim*, as to the *modus operandi*, or even its possibility. We will proceed now to examine if there be any instances on record which approximate more nearly to the probable limits of this category, than those cases which I have hitherto cited.

I shall commence with two cases, whose history is more familiar to me than others—both of them having occurred within a short distance of my former residence in South Carolina.

The *first*, I have received from several very old and veritable persons, whose parents lived contemporaneously with the event, and it is the case referred to by *Buffon*, and quoted by all subsequent writers since his day as the "*American Case*."

The *second* occurred at a plantation on the *Pec Dee River*, not more than eighteen miles from my residence, and I have frequently seen one of the children. The history of the "*American case*" is this:—Between Charleston and Georgetown, (S. C.) on the stage road, there was a small settlement, now uninhabited, but still called, from the event, "*Mulatto Town*." A white man first, previously to leaving his bed at daylight, had connection with his wife—and left her to call his negroes to labour. In a very short time after he sent his negro to the house on some errand, where he found the woman yet in her bed, and he *also copulated with her*, according to some accounts, through her salacious entreaties; others said she yielded to his threats of taking her life, (which, by the way, would defeat conception, if the views of some medical jurists be correct.) Be it as it may, in due time *she was delivered of two healthy living children, one white—the other mulatto.*

The Pec Dee Case.—On the plantation of a gentleman, about thirty years ago, there was employed an Irish overseer. He entered the hut of a negro one morning and copulated with his wife, just as he had left her

to go to his work, first having conected with her himself. In regular process of time the negress was delivered of *two healthy, live-born children, one perfectly black—the other a light mulatto*. They were both, I think, alive in 1840, when I left Carolina. The mulatto boy I know was. He was named after his white father, and was a likely, intelligent man, about twenty-five years of age, and the favourite body servant of his master.

Dr. Walsh, in his "Notices of Brazil," (vol. 2d page 90,) relates the case of a creole woman who gave birth to *three children at one time, one white, one brown, and one black*. Each child had the features of its respective class.

Mosely (Dis. of Trop. Climates, p. 111) reports the case of the "Ohortwood Estate" at the island of Jamaica, where a negress brought forth *two children* at a birth, *one a negro, the other a mulatto*. When interrogated as to an explanation, she answered, that a white man on the estate came to her hut one morning before she had risen and she suffered his embraces almost instantly after her black husband had quitted her.

Zachias, in his "Consilia," (see Guy, p. 110, who also refers to the two preceding cases,) states this case. *J. N. Sobrejus* lost his life in a quarrel, leaving his wife pregnant. *Eight months afterwards*, she was delivered of a dead and deformed child. *One month subsequently*, she gave birth to a perfect living child.

Foderé (vol. i. p. 484-6), cites the case of the wife of Raymond Villard, of Lyons. She was delivered on *20th Jan. 1780* of a living 7 months child. On the *6th July following*, (five months after delivery,) she was delivered of a living daughter.

Beek, (*Med. Jurisp.* vol. i. p. 222,) reports that *Dr. Maton* delivered a woman of two male children perfectly developed *at intervals of nearly three calendar months*. *Beek* quotes other cases, viz., three at intervals of one month, three of *two months*, and one of *four months*.

Pliny tells of a servant girl who *copulated the same day with two several persons*. She gave birth to two children. *One resembled the master, and the other his proetor*. (Vide *Maurieau*, p. 42.)

Delmas, surgeon at Rouen, delivered a woman at the hospital, of *two male children at one birth*, at 8th month of gestation. *One was white, the other tawny*, placenta united. She confessed that *she had cohabited with a white man, but twice had yielded to the importunities of a negro, when she supposed she was 4 months advanced*. (*Amer. Journ. Med. Sci.*, Aug. 1828, p. 421.)

Dr. Jamieson, of Dublin, relates of a lady who was confined of a healthy child which she nursed, and *seven weeks afterwards*, she brought forth *another of six months gestation*, with membranes entire and placenta attached. It was from 8 to 9 inches long. The first was born 13th Feb., the last 3d April 1841. *The dead fœtus had remained in the uterus forty-nine weeks*. (*Dub. Journ. Med. Sci.*, Sept. 1841.)

John Irvine, surgeon, British navy, records the case of a woman delivered by *Dr. Burleigh* on the *first of October* of a female child, at full period of utero-gestation; healthy, rather small sized. Placenta expelled in three hours by natural contractions. On the 2d Nov. she gave birth to a healthy large male infant. Placenta followed in two hours. (*Med. Times*, Dec. 28, 1844.)

Dr. Pertus (*Rev. Med.*, March 1838) gives the following case. Pregnancy, Jane, 1837. On 20th September, slight hemorrhage with pains lasting eight days. Examined the coagula and discovered a *fœtus 3 months*

old with its annexes, and subsequently an entire ovum, in which was a fœtus of 5 weeks old. (Vide *Amer. Journ. Med. Sci.*, 1838, p. 451.)

Smellie ("Cases of Midwifery," Ed. 1754, vol. 2d, p. 85) reports a case occurring in the practice of Mr. Campbell. A woman delivered of her first child, followed by severe after pains. Five days after she miscarried of a fœtus, 4 or 5 months old, still born, no signs of putrefaction, having neither hair nor other signs of having been longer conceived. Smellie wrote to Mr. Campbell, "what you have written me seems to favour the doctrine of superfœtation, more than anything I have met with in practice. But there are instances of extra-uterine fœtuses which have laid whole years in the abdomen without being putrefied."

In the *Providence (R. I.) Gazette*, Aug. 1845, the following case is reported:—"A coloured woman in the town of Bristol was on Friday week delivered of a black child, and on the Sunday following of a white one. The first was very black, and the last as white as children of white parents ordinarily are. The children have been seen by nearly the whole town of Bristol, and the facts are corroborated by Drs. Holmes and Briggs, who attended on both occasions of child-birth."

In the *Amer. Journ. Med. Sci.*, July 1842, p. 220, a case is contributed by Prof. Beck, taken from the *Bulletin de l'Acad. Roy. de Paris*, (Séance, Dec. 21, 1841.) The article is headed *Superfœtation*, but I do not think that it legitimately belongs to that classification. M. Renaudien attends a female who aborts in the sixth month of pregnancy; she died under severe symptoms of puerperal peritonitis seven days after. Dissection discovers a uterus with a double neck and two cavities, with an ovary, fallopian tubes and ligaments to each. Hence it is inferred that "superfœtation might have occurred." I do not recognize a case to be one of superfœtation, unless the anatomical structure of the receiving parts is normal, and the reiterated deposit of germinal matter is received *cæteris paribus*. It requires no stretch of the imagination, nor tax upon our assent, to acknowledge that with two distinct receptacles and two distinct sources of supply, each should be capable of appropriating to itself its peculiar burden. The genital conformation of numerous animals sanctions this admission, but this is not what a rigid inquiry would demand as definitive. The idea of superfœtation is strictly confined to the possibility (denied by our opponents) of a single uterus receiving the ovum for a second child, after those actions are set up within the uterus and its appendages, which are declared to be antagonistic to such a result. I have deemed it proper to notice this case briefly, and I apply it to all such other instances as have been or may be adduced. I do not wish the argument trammelled; it asks only for the irrefragable proof, such as the case I have given from the *Providence Gazette*, and others of like kind, where the different colours of the children paralyze theories.

The last case I shall offer is from *Casper's Wochenschrift*, Jan. 28, 1842. A black woman of Surinam copulated during the same night with a negro and an European. She was delivered of two children, one a negress, the other a mulatto. Dr. Hille, a Dutch surgeon, attached to the army at Surinam, states that in 1841 the children were alive and then eight years old. He adds that at the death of the mother, who died previous to this period, an examination revealed the genital parts to have been perfectly natural in their structure.

While preparing this essay I have been informed by a friend, of a case which occurred about 1830 in Virginia. The authority is strictly veracious,

and the parties from whom the information was derived are of the highest respectability and intelligence. A negress at the time of corn harvest was met by a *negro man* in a remote part of the field, who copulated with her. On her way back a short time after, she was encountered by the *white man* to whom she was hired and he performed the same act for her. In due time she brought forth *two children, one perfectly black, the other mulatto*.

Having completed the narration of such human cases as I had collected, I will conclude this part of the question by an *alleged case of superfætation in a goat*, as communicated to *Dr. Berjaud* by *Dr. Pertus*.

The animal had received the caresses of the ram in the beginning of Dec. 1836 and was supposed to have fecundated. She however continued to manifest a desire for the male, *and was gratified fifteen days afterwards*. In the beginning of May she brought forth two young, perfectly formed, but refused to suckle them, and they perished. The abdomen remained large, and in 15 days more she brought forth *three others perfectly formed*, and seemed very anxious to nourish these. They lived three days. N. B. The term of gestation in goats is five months, at which period, the first two were born, and the *number of young generally two*, but never more than three.

The recital of cases bearing so similarly upon one subject has perhaps proved tedious, but as they were the result of some years' collection, I thought that while they answered no immediate purposes of utility, they might at least serve as an index to others, who, desiring to pursue the investigation would have their labours thus far abridged.

In reviewing what I have written I find that I have submitted for your inspection a specimen which under any aspect is of curious interest, whether we regard it as a blighted fætus of one conception of twins, or whether it be considered one of those embryos whose uterine existence depended upon the yet unsettled hypothesis of superfætation. It is equally worthy of reflection, viewed merely with reference to that singular and unaccountable property of the uterus, by which it is enabled to retain within its cavity for an indefinite period, a decidedly foreign substance, unnecessary to it as an organ, and destined to act no part in the great works of nature. Moreover, this foreign dead matter remains undecomposed, free from putridity, the fate of all other dead matter, animal or vegetable, especially when subjected to two such agents as heat and moisture.

How is this? Upon what depends this antiseptic property in most of the cases so far recorded? Why is it, to use the language of a distinguished author, that "*whatever may be the condition of the dead fætus, the tenantry of the living one, even up to its maturity, may in no respect be affected?*" It cannot be wholly or scarcely at all ascribed to the preservative qualities of the amniotic fluid, because *firstly*, the component parts of this fluid are not qualified for this end, consisting, according to recognized analysis, of the following elements, "*a peculiar acid called amniotic, with a little muriate of soda and ammonia, and a trace of the pbosphate of lime, and is said to be very little more than water having a little gluten in it,*

sometimes serous and pellucid, at others turbid and offensive. We are further informed, that while in the earlier months, it is nearly if not quite transparent; as pregnancy advances it becomes turbid, containing more or less of what appears to be mucus:—Secondly, we know that in the advanced stages of gestation, when the fœtus dies from any cause, and is retained but a very limited time after death, we find on its expulsion the incipient signs of decomposition, and frequently entire decay and desquamation, which signs are adopted to guide medical jurists in their investigation of criminal cases. Why, we ask, should this unavailing mimic miniature of man escape the influences of destruction, when older embryos, capable of maturity, with increased resources of vitality, undergo the almost universal doom of dead matter?

Another curious point of inquiry is created, as far as it may affect the right of property, vesting upon proofs of legitimacy—and this warrants the question,—*Does or can Superfetation occur?*—We are constrained to admit, in the premises, that the array of objections to the doctrine are specious, and are urged by some of the noblest physiologists. But it is equally evident that in the midst of their doubts and investigations, facts have stared them in the face of so obstinate and irresistible a nature as to qualify in a very material degree these objections. The admissions to which, from time to time they are driven, are based upon certain contingencies, and I think that the authorities and facts which I have already presented, afford these contingencies beyond dispute. The opponents to the doctrine further feel the difficulty of persisting, as is frequently to be seen when consulting the cases quoted even by themselves, from which, it is evident, they cannot fly, and, in short, I am clearly of opinion, after a mature review of everything they have written against it, that they rather uphold than invalidate the theory. It does not, nor must it satisfy the inquirer after truth, to have the alternative crowded upon his acceptance in the form of a compromise. In science, no such thing is admissible. *It is either superfetation, or it is not.* We do not receive the substitute of terms, such as “superfecundation,” “contemporaneous conception,” “secondary ovum,” and the like, because, surely, if connection by coition through means of one man impregnate, it is *one fœtation*; and if another man perform the same act upon the same woman (within prescribed period assigned to gestation), with equal success, it is *super-fœtation*, that is, a second fœtation superimposed upon the first;—so that, with all the distortion of which language is capable, it cannot be construed otherwise, for as I have before said, the cases I have presented substantiate the fact, else, literally, (as in some of my examples,) *black and white* have at last ceased to be proof. Hence there is no good reason for denying to the influence of copulation by one man, that which examples concede to claim of the same act by different men, and even of different colours. Besides, it is common for the husband to cohabit very regularly during the early months of pregnancy,

for in the report which I have given of *Dr. Defermon's* case, this fact is specially stated in evidence, and as the *occlusion of the uterus* and the formation of the *membrana decidua* are amongst the prominent arguments against the possibility of superfœtation, there is no propriety in pushing our inquiries somewhat further, and ascertaining, if possible, at what precise time these *quarantines* of the uterine dominions commence, and at what time their ports are irrevocably closed against foreign entries. It is admitted upon authority not to be slighted, that although the deciduous membrane does exist at the time specified, and notwithstanding the cavities for some wise purpose are in a manner closed, yet neither this membrane lining the uterus, nor the mucus which effects the closure, *although in contact* with the orifices and cells of that organ, adhere so firmly as to prevent the ingress of the semen or even of the "*aura seminalis*," provided this last be admitted to exist. Nor do they prevent the frequency of hemorrhages during gestation,—nor is the menstrual discharge, to which some women are subject while pregnant, obstructed. But, say the opponents, when the uterus is impregnated, the Fallopian tubes, instead of "*running horizontally*," to the organ, "*lie parallel to its sides*," thus preventing them from embracing a new embryo from the ovaria. This might be reasonable, if it applied to a fully developed uterus, but not in early pregnancy, when superfœtation is supposed most commonly to occur. The weakest and last objection urged is, that if superfœtation were true, the new embryo would prove destructive to the first. This objection is weak and generally set down as the most gratuitous of all of their assumptions. Let us return, however, to the closure of the uterine orifices by the causes already named,—and we are prepared to meet this objection by falling back upon old *Mauriceau*. (*Op. Citat.*, p. 44.) He says, "when a woman is animated with an *earnest desire* for copulation, in the heat of the action, she sometimes dischargeth by the passage that terminates in the bottom of the womb, which *being dilated and opened* by the impetuous endevours of the seed, *agitated and overwhelmed* more than ordinarily, and this orifice *being at the same time a little opened*, if the man's seed is darted into it *at the same moment*, it is thought a woman may then again conceive, *which is called superfœtation*." "Therefore," he adds, "I am not willing to say that there never is any superfœtation, but that it happens very rarely."

An admission to this extent from *Mauriceau* is of force, as it is extracted from him during researches which might rather be said to be adverse to the doctrine than otherwise. And if its occurrence is granted as being possible in one instance—it fixes the fact. Its frequency is irrelevant. Nor should the period at which he wrote be objected as "*antiquated*," since I am clearly of the opinion, that on this subject and its embarrassments, the light since shed has been greatly disproportioned to the advantages enjoyed by later inquirers, and perhaps in no age have medical men, aspiring to eminence, involved themselves in grosser absurdities, nor

entrenched themselves behind more inconsequential arguments, than have some of our own times.

Again,—all who canvass the broad question of generation, speak of an “*orgasm*” as essential to certain results. Now this is a term and nothing more. Men are in the habit of using different names for the same things, and upon a rigid comparison, I unquestionably prefer the unsophisticated energy of the ancient writers to the hyperclassical and affected confusion of the latter day neologists. For example, on this very subject, where *Mauriceau* speaks of “an earnest desire for copulation,” he in another place (p. 22) says, “now to the end, these different sexes should be obliged to come to this touch which we call copulation: besides *the desire of begetting their like, which naturally inclines them to it*, the parts of men and women destined to generation, are *endued with a delightful and mutual itch, to stir them up to the action*, without which it would be impossible for a man, (so divine an animal,) born for the contemplation of heavenly things, to join himself to a woman, in regard to the uncleanness of the parts, and of the act.”

Now these various expressions, no less graphic than true, certainly harmonize with all after opinions, and sustain the litigated points yet at issue in questions of rape, as to whether a woman can be impregnated unconsciously during sleep; or whether she can conceive from forcible copulation, when her weakness “not her will consents,” and many others equally doubtful to the minds of jurists, medical and legal. Why then deny to the uterus the competency of repeating the procreative power under the *orgasm* excited by *two different men* upon the impressionable ovum, provided two pre-requisites obtain?

1st. That the act be performed within the time prescribed by the advocates of superfœtation, as well as by its opponents, (who have been forced, at times, to yield certain grounds,) viz., *within thirty days after the first conception*. 2d. That the proposition be true with regard to the anatomical and physiological *condition of the parts in the early months of gestation*. If then the os uteri be capable at this period of affording an exit (as has already been shown) to the catamenia, hemorrhages, and even the expulsion of the ovum, it argues that these supposititious barriers are not so formidable as might be imagined. We are justified in a contrary inference from all observation. Indeed, a still stronger point can be established; because this *membrana decidua*, the very gate of the inner temple, to some physiologists, *might as reasonably be urged against the introduction of any ovum at all*, whether of the first or subsequent copulation, since, according to *Hunter*, the uterus is lined with “*a soft, humid, paste-like secretion*, furnished by the secreting vessels of its lining membrane,” (constituting his deciduous membrane,) “from the earliest trace of impregnation which is to be observed in the cavity of the uterus.—AND EVEN BEFORE THE OVUM HAS REACHED IT.” If then it can keep out the last ovum to suit our

opponents—why it certainly, if Hunter be correct, can reject the first. This adventitious membrane, which, according to my belief, is doubtless destined for *ultimate*, and not for immediate service, upon all good authority “appears to be nothing else than an effusion of coagulable lymph,” having, as Hunter says, “scarcely a more firm consistence than end of milk or coagulum of blood,” and in the opinion of *Rigby*, (p. 48,) “although much thicker than the other membranes it is much weaker.” *Rigby* also says, “inferiorly *near the os uteri* it becomes thinner.” Again,—“it is much more loosely connected with the uterus *during the first months* of pregnancy,” “*and this is one reason why premature expulsion of the ovum is more liable to take place at this period than later.* (*Loco. cit.*) With all these facts it is no very fanciful conjecture to suppose that the same state of the parts, which is capable of permitting substances, from a slimy secretion, to an entire ovum, to escape, *may allow others to enter.* Nor is it unlikely that a frail and soluble substance no firmer than a “coagulum of blood, or the curd of milk,” should give way to the violence and heat of orgasm, or to the vehemence and force of an ardent copulation, when both parties are maddened to that state of unconscious and ungovernable passion, to which has been eloquently ascribed the genius of the Athenian orator, who was said to have been “*conceived in rapture, and in fire begot.*”

My views seem more directly confirmed by another fact, which is, the frequent occurrence of *early abortions*, ay, and later miscarriages, in consequence of undue and violent venereal indulgences.

You may recollect that I had occasion to refer to Dr. Defermon's case, in order to show that this supposed occlusion might be disturbed by regular cohabiting during the early months. Permit me to call your attention now, to another feature in that case, then omitted. The reporter states that “*six weeks* after conception she underwent fatigue, *after which, spots of blood were seen on her linen.*” May not those spots have been the result of laceration, or a breach of continuity of this very slender, incipient curtain, no stronger than coagulum, occasioned by a violence of venereal pleasure, within the term prescribed on all sides, for the possibility of a second conception? The thing is not even improbable.

The possibility of superfœtation is also admitted by distinguished physiologists, *provided* the intervals between the respective copulations be short, (as for instance in the “*American case*,”) and they further concede, that where the two children are born *at an interval of some months, they are not twins*, although existing some time together in the mother's womb: (vide *Richerand Phys.*) And in these opinions they are sustained by recorded examples, but more especially, if you recollect, those reported by *Beck*, where the intervals extended *from one to four months* between the births of mature children. This evidence disarms even *Guy* of his doubts

concerning superfœtation, because he admits that "a long interval, say of four months," favours the doctrine: (p. 113.)

There are other though less weighty objections to our theory, among which is the presumption that there cannot be a case of superfœtation, where there is "one placenta for both children;" and *Mauriceau* goes so far as to declare all such to be cases of "twins of one coconception," inasmuch as he believes that out of every one hundred women who have twins, "ninety have but one burden common to both." In this opinion he is at direct issue with *Hugh Chamberlen*, the translator and editor of his book, who in his comment upon this assertion says, "The author is out of his computation, for there are *near as many with two as with one burden*." Besides, you may call to mind the case I cited from the *Mcd. Times*, where two children were born, one on the 1st. Oct., the other on the 2d. Nov. following, *each having its distinct placenta*, and as the record of similar cases is by no means rare, it is useless to cite them, for these exceptions, condemning them out of their own mouths, would become too numerous, to promise them the shadow of a general rule. Another weak, though plausible objection is, that "conception may take place in the same ovary, or in different ovaries, from the nearly simultaneous application of semen, *whether of the same man or of different men*:" (*Guy*, 110.) This is a gratuity in speculation not admissible, for, when an unknown cause is attempted to be set up in opposition to a known effect, for which a strong presumptive cause can be assigned, and when both are equally incapable of demonstration absolute, the assent of our reason is justly due to the most rational. Now in my review of the definition and the possibility of superfœtation, I urged that a *second impregnation, superimposed upon a first*, came distinctly within this category, and I care not what the interval of the respective copulations may be, because I maintain that *conception and impregnation is an instantaneous act*. I believe that whenever a consensual condition of two individuals exists (*cæteris paribus*) so as to produce the ecstasy capable of arousing the response of the ovarian orgasm to the impulse imparted by the male semen, *that impulse is electrical, immediate and irresistible*. I believe that the venereal torch is applied to materials, combustible and already prepared for their destiny, and that the vivifying power has not to wander about for its election, and incubate the ovum as a hen does its egg, but, that the ripened and expectant germ attracts by its specific, although mysterious affinity, the messenger sent to usher another being upon the stage of human life. What the result may be, remains for future development; it may perchance eventuate in bydatids, in mole, or any other lusus, according to the functional integrity of the respective machinery afterwards called upon to complete the work so beautifully begun.*

* *Nisbet* says, "The *retrograde* action of the Fallopian tubes is assisted by a collapse *succeeding the excitation which coition has produced*."

Richerand, arguing for the experiments of *Haller*, says, "In a ewe opened a few

Well then, if I am correct, I am authorized to regard the impregnating act of each man as an act of *fætation*, and the second, fixed upon the first, as *super-fætation*, independent of the time. Besides which, the possibility of even a longer duration of time between the acts is not necessarily excluded, for reasons which I have already advanced when I examined the anatomical and *post-coitu* condition of the uterus. Again: the "simultaneous application of semen *by one man*," to different ovaries, I cannot deny, else I would deny the existence of twins; but I do emphatic-

minutes after coition, you may see a vesicle larger than the others, torn, with a little wound of which the lips are still bloody." (*Physiology*, p. 477.)

Broussais, (*Physiology*, p. 534.) "The stimulation of the vagina produced by coitus being, as we have said, communicated to the whole uterine apparatus, the Fallopian tubes are thrown into a state of erection, by which, of themselves, their fimbriæ are applied to and embrace the ovaries. This is an indispensable preliminary for conception to take place, after which it is necessary that the semen thrown into the vaginal cavity should pass the neck of the uterus, penetrate into the Fallopian tubes, and traverse them so as to reach the ovaries. One of the last mentioned organs is adequate to bring about conception. Stimulated by the semen, it reddens and swells at the most yielding point—its investing membrane is ruptured and gives issue to a drop of gelatinous-albuminous fluid, which the Fallopian tube, the fimbriæ of which are still applied to the ovary, takes up, absorbs and conducts, by a kind of peristaltic movement, into the cavity of the uterus."

At p. 537, *oper. cit.* he adds, "Is conception effected at the moment of coition? I do not believe there can be any doubt on this subject."

But Broussais is still more explicit in declaring his belief, when commenting upon a case which he cites from *Prof. Lallemand*, (*oper. cit.* p. 551.)

It is the case of a woman who, while in *coitu*, was surprised and alarmed by the opening of her chamber door. After a painful and abnormal pregnancy she died, and the post-mortem examination developed an *extra-uterine fætation*. The reflections occurring to the mind of Broussais from the history of the case, induce him among other corollaries, to put this question. "Did the ovum fall at the instant in the cavity of the pelvis, or, only a few days later?" And he answers himself thus,—"The first case would suppose that the prolific drop (*i. e.* the fluid of the ovum) is absorbed by the tube and carried to the uterus at the very instant of conception." After arguing the converse, he adds, "We know that observers admit that the ovary fecundated by the spermatic fluid, requires a certain number of days to project its ovum, and that it is in order to wait for it, that the fimbriated extremity of the tube, kept in a state of erection by the irritated ovary, remains in apposition with it. But were this really the case, I am surprised that extra-uterine pregnancies should so rarely occur, for during the number of days supposed requisite for the detachment of the ovum, women are often exposed to moral emotions as vivid as that of which I have just spoken, and not less capable of destroying the vital erection of the tube, which maintains its fimbriated extremity in apposition with the ovary." "For if the detachment of the ovum requires so long a period, women can hardly be taken too much care of, during the days immediately succeeding conception."

In conclusion, I will add to these inquiries of Broussais another, suggesting itself to my mind, and it is this: Why does not the violent exercise of coitus in which newly married women indulge so immediately at the time when conception occurs, more frequently produce the same extra-uterine accidents?

ally deny that the simultaneous application of semen by *different men* to the same ovaries constitutes a case of twins, and no reasoning can sanction it. Each man is capable of imparting his own peculiar impression, and *then only* can its effects be received, *cæteris paribus*. If he fails, the next man may impart his, and thus in proportion to the single or several success will one or more impregnations be effected, separate and distinct, as such, and each child so begotten has not only its separate father but its separate impregnation. Still more decided is this postulate where the children partake of the distinctive races of their sires, as in cases of *white and mulatto*, or *mulatto and black*. The truth is so palpable that it might even be said to destroy the proverb, "He is a wise child that knows its own father," which would be probable where twins are begotten by one man at one time, but in superfætation cases, (such as in South Carolina,) where a white man claims one and a black man the other, the child must be a born idiot to mistake its ancestry. To meet such objections fairly, therefore, it would be necessary to canvass them too extensively for time or utility, for we can readily perceive that it embraces the entire scope of the still mooted, unsettled question as to the means by which the semen reaches the ovaria in order to vitalize the sleeping germ of the future man. How are we to reconcile the various opinions seemingly based upon the conscientious convictions of the most elaborate inquiries? The "nearly simultaneous" application of the semen from the same man or from different men must unavoidably be made to depend upon its *mode of entrance*.* Upon this point, the schools

* This doubtless is a vexed question, and responsible authorities are arrayed against each other, but I am not satisfied with the objections urged by *Dr. Chapman* in the copious note in his edition of *Richerand*, (1821, pp. 471-474,) for, if he be correct in the premises, it may with great propriety be asked, *in what use is the semen destined?* In organs so manifestly important, and so indispensable to the perpetuation of our race, it cannot for an instant be supposed, that the nice and perfect elaboration of this fluid, and its retention until just at that critical moment, when the Almighty first pleases to consummate his most wonderful work, should have been a gratuitous dispensation, because, in all other of our excretions, periodical discharges are established and their undue retention is attended with pathological results. But the influences of castration would alone resolve this doubt. Destroy the laboratory whence the semen proceeds, and will impregnation be practicable?

Apart then from the assertions made by Haller, Morgagni, Richerand and others, (and the compulsory acknowledgment that once occurring it must be supposed again possible,) *Dr. Chapman's* objections are evidently feeble. He denies the entrance of the semen in utero, because—1st. "The vagina grasps the penis and prevents the projectile force." Now we know that this cannot obtain in all cases, owing to the numerous instances where the vagina is immensely disproportioned to the penis, and no such strangling grasp occurs, and the professor himself admits that "the male organ is endowed with a considerable projectile force."

2d. He objects, because the "spissitude of the semen" prevents its projection the requisite distance. This is readily answered, I think, by a knowledge of the distance to which onanists are capable of projecting it. Again, *Broussais* expressly says that

are divided mainly between the *Ovarists* and the *Epigenesists*. Their arguments spread far and wide, and their conclusions result in uncertainty. *Richerand* and his co-thinkers are of the opinion that although the penis does not enter the uterus, *the semen does*, and it is done, he thinks, at the moment of copulation, when the uterus "from irritation draws together and inhales by *real suction* the semen *which it craves*:" (*Phys.*, p. 47.) You are all acquainted with the multiplied experiments of *Spallanzani*, who asserts that he discovered semen in the uterus upon opening animals immediately after copulation, and *Dr. Good*, than whom there never has been a more indefatigable collector of medical history, after a learned review of all the contending theories, establishes for himself seven positions—the first of which applies directly to the point now in discussion. He says that the experiments from the time of *Harvey* to the period at which he himself wrote, and "particularly during the last half century, have sufficiently established," that "In all ordinary cases the *male semen enters the uterus at the time of coition*." (*Study of Med.*, v. ii. p. 422.)

I am, moreover, disposed to believe that the semen enters the uterus, through the os uteri, for other reasons. It is admitted upon very competent authority (and I particularly desire your attention to this fact), that *whether the ovum leaves its bed or not, still, the membrana decidua is formed*, (*Dewees, Syst. Mid.*, p. 64,) and it is distinctly asserted that *the impregnation of the ovaries is all that is required* for the production of this membrane. Two corollaries are deducible from this physiological admission. 1st. The same act which injects the uterus with semen, produces that condition of its tissues preparatory to the formation of the deciduous membrane, and at the same time places the ovaries in that responsive condition essential to conception. The formation of this membrane being, then, the keystone of all objections against the doctrine of superfœtation, how do those who urge them overcome the difficulty interposed to prevent the entrance of *any ovum*, whether for a single or a twin conception? Especially since physiology can affix no accurate time at which the ovum is disengaged from the ovarium, nor the length of time requisite for it, when so disengaged, to reach the portals of the uterus or gain admission within its walls? And, I again desire it to be remembered that this is not

"coition produees in women contractiuns of the vagina, *which is thereby shortened and approximated to its axis*." (*Physiology*, ed. 1829, p. 534.)

3d. He opposes to the entrance of the semen, the "rugæ of the vagina," which he thinks are "designed as so many barriers, to arrest the progress of the semen," and to this let me add his other objection, viz., the unfavourable position of the os tincæ for such a purpose.

These are ultra-hypothetical, because it can readily be conjectured (and this is all we are permitted to do at *this stage of the inquiry*), that the same anatomical law by which other surfaces are permitted to change their relations for the accomplishment of great functional duties, is as operative here, so that the rugæ may be effaced *pro tempore*, and the os tincæ thrown into a corresponding aptitude.

an argument hinged upon the contingency of an *extra-uterine*, *Fallopian*, or any such abnormal form of embryology, but upon the fact (if DEWEES and others be right,) that the membrane is formed "*whether the ovum leaves its bed or not.*" Hypothetical periods, it is true, have been assumed, for the time at which the ovum, after coition, commences its journey to the uterine cavity,—and upon comparing the amount of testimony, the nearest approach to that time is an average of twenty days. 2dly. I am justified in my opinion of the instantaneous act of conception, because, if the ovum does not reach its destined resting place, nor "even leave its bed," previously to the range of average, why then, the *membrana decidua*, and the *mucus*, occluding every avenue, being immediately formed without reference to those contingencies, the after chances for peopling the world would be small indeed.

From all I have said, therefore, and with the authorities which I have brought to bear upon my opinions, I feel I can safely assume the doctrine of superfœtation at any period within a reasonable time, not directly contravened by so long an interval between the periods of copulation as to preclude the chances of the semen being received. Having given my objections against the interference of the membrane and the mucus, I will merely add that this membrane is said to have "*no perceptible blood-vessels at that part which is situated near the cervix uteri,—this portion being much more loosely connected with the uterus.*" Again,—"*there is at an early period of pregnancy an angle formed between the decidua reflexa and the decidua vera, and here it, (the latter,) is often extremely thin and perforated with small holes like a piece of lace.*" (Rigby, p. 48.)

It is, therefore, begging the question for our opponents to ask this "*nearly simultaneous application of semen, &c.,*" in the face of their own oft reiterated obstacles to such an event, namely, the occlusion, &c., immediately subsequent to conception.

In conclusion, I will say that I have done no more than sport, as others have done, over a wide field of conjecture,—and after all, when we shall have exhausted ourselves and others, what has been accomplished? Literally nothing,—"*causa latet, vis est notissima.*"

The fourth and last question connected with the specimen you have seen is this:—"*What would have been the chances for spontaneous amputation, had this fetus progressed to maturity with the present condition of the umbilical cord?*"

It is an interesting inquiry, and by no means irrational, if we are to be guided by the many instances in which this intra-uterine operation has been performed with and without the abnormal distribution of the cord as we see here presented. This lesion had occasionally been noticed by authors, among whom were *Richerand*, (*Elem. de Phys.*, p. 477,) *Dcsormeaux*, (*Dict. de Med.*, vol. xv. p. 404,) *Billard*, (*Mal. des Enfants*, p. 623,) *Murat*, (*Dict. des Sci. Med.*, vol. xvi. p. 70.) But it received no

formal or statistical attention until 1832, when *Dr. Montgomery* published his views on the subject in the *Dub. Med. Journ. Med. Sci.*, vol. i. p. 140, and this having attracted the attention of medical men both in Europe and this country, he was induced to embody the cases which he had seen, with those subsequently coming under his knowledge, in a regular essay now appended to his valuable work on "Pregnancy," and to which I shall be chiefly indebted for many of the citations I will presently adduce.

The agency of the umbilical cord in the production of this phenomenon, is not conceded by all who have either seen, or written concerning it. *Haller* was of opinion, that the malformation always resulted from imperfect development, and not from the removal of a part already formed, and perhaps he was induced to this mode of thinking, from the fact, that there have occurred cases, for which no assignable causes existed. But the propriety of his suggestion is questionable, for the reason, that in many instances, the amputated part has been thrown off some time prior to the birth of the child, exhibiting the limb thus mutilated, and where *the stump was not entirely healed*, either on the foot or the extremity from which it had been separated. On some occasions the bone was not quite covered.

And in objection to the idea that it proceeds from death of the part, I would add, there is no evidence of decomposition which would support such a belief.

I have said that there were cases presenting the deformity, for which no *mechanical cause* could be assigned. I select a few.

1st. *Mr. Watkins* (*Lond. Med. and Phys. Journ.*, vol. 54) relates a case where the *left foot* was removed above the ankle. It was nearly, but *not quite healed*. No marks of putrefaction. The amputated portion and stump appeared in perfect preservation. *Mr. W.* offers no opinion as to its nature or cause.

2d. *M. Chaussier* (*Discours prononcé à l'Hôpital de la Maternité*, 1812) mentions two cases occurring to the fore-arm, and another where the disconnected portions of the hand and arm were lying apart. *The stump was healed*. He attributes it to gangrene, but for reasons to which I have adverted, this would seem to be merely hypothetical, as there is nothing to justify the belief.

3d. *Dr. Tyson West*, of Alford, Lincolnshire, (*Lond. Med. and Phys. Journ.*, 1832, v. i. p. 741,) communicated to *Dr. Montgomery* a case occurring at the Westminster Lying-in Hospital. He accounts for the loss of the amputated portion, by the great consternation produced at the time, but he decidedly thinks that "*the division of the limb was effected by some stricture around it.*" "The stump," he adds, "was partially healed and nicely rounded, an inch and a half below the knee."

4th. *Viel* (*Frorieps Notizen*, bd. xii. p. 26; quoted by *Montgomery*, *Oper. cit.*, p. 219) relates a case where the left foot was separated from the bone, during the fætal state, and the fore foot was born by itself quite healed.

5th. *Béclard*, (*Bulletin de la Faculté, &c.*, 1817, vol. v. p. 213,) another case of *deep depression penetrating to the bone*, without any ostensible cause. He is of opinion that if the fætus had remained in utero (it was an abortion)

until maturity, "it would have been born with an amputated and cicatrized leg, the remains of which might have been found in the liquor amnii."

6th. Dr. Fitch (*Amer. Journ. of Med. Sci.*, No. xxxv., May, 1836, p. 90) relates a very interesting case which I shall abridge. A woman in seventh month of gestation, had on 17th March a sudden discharge of liquor amnii. On the 21st, a *fœtal foot* perfectly formed was thrown off, separated apparently at the ankle-joint. It was in perfect preservation.

On 5th April, she was delivered of a seven months fœtus. The cicatrix was not complete at the time of birth, but the superior portion of the limb down to the knee corresponded in every respect to its fellow.

Remarks.—Dr. Fitch takes occasion in this case, to notice particularly that property in the uterus to which, you recollect, I adverted, as so remarkable in protecting against putrefaction, animal substances accidentally separated from the maternal circulation. Such, for instance, as the blighted fœtus, which forms the subject of this essay. He likewise refers to the decomposition of a small portion that remained a few days after delivery, subjected to the "warmth of the body and other influences," which accords with the contrast I instituted between the fœtal preservation and the decomposition ensuing upon retained portions of post partu placenta.

Another character of cases occurs, where the lesion does not depend upon the umbilical cord, but upon "*a preternatural growth of ligamentous cords and bands, and their attachment round and about the fœtal limb with such force as to produce the same results.*"

Montgomery (*Oper. cit.*) gives the case of a fœtus, aborted at fifth month. There were *complete ligaments* surrounding the limbs, consisting of distinct threads passing down from both hands to the legs,—at one end forming a complete ligature around the middle of each hand, preserving a distinct depression where it passed; the *part of the hand below it almost completely undeveloped*. It descended thence towards the legs, which it crossed and surrounded, just above the ankles, so tightly, that *fully two-thirds of their thickness was divided*. No discoloration nor the slightest appearance of disease.

N. B. Four years subsequently, Dr. M. was shown by Dr. Labatt another case similar to his own.

Tragorsky describes another case. (*Mém. Imp. Acad. Sci.*, St. Petersburg, 1834. 6th series, vol. iii. pp. 3-7.)

Dr. W. C. Roberts, of New York, in a very interesting monograph upon "*Diseases of the Fœtus*," (*Amer. Journ. Med. Sci.*, Aug., 1840, p. 383.) refers to a case such as the one just cited, reported by Dr. Newnham, (*Med. Repos.* vol. iii.,) where a fœtus had those preternatural ligaments tightly coiled around the *left leg*, which was enormously swelled, creating a deep sulcus.

As to the production of these ligatures, various speculations have been promulged. Gurlt, Prof. Roy. School at Berlin, rejects the notion of gangrene, and thinks they depend upon the history of the formation of the fœtus, being *prolongations of the egg membrane from which the fœtus grows*, whether this skin (or membrane) be taken as the navel, bladder or the amnion; but "denies to them the character of organized lymph." (Montgomery, *Op. cit.*, p. 217.) He also thinks that they are, afterwards; by the constant motions of the fœtus, twisted into slight, but firm cords or threads, which may involve different portions of the fœtal limbs, so as to "stricture them and cause their separation," producing thereby what has been called spontaneous amputation. From this view of the professor,

Dr. Montgomery dissents, because he believes that whenever this ligamentous cohesion exists between the amnion and the fœtus; "it produces a monstrosity of a peculiar kind, such," he says, "as was observable in the different specimens from which Professor Gurlt deduced his conclusions. where one end of the hand was invariably attached to the amnion, while the other was connected with the fœtus." Whereas, in those cases coming under his own notice, "both ends of the ligament were attached to the fetal limbs."

Neither of these solutions appears to my mind sufficiently satisfactory, nor do they shed much light upon the matter. In fact, Montgomery himself confesses his inability, after five years deliberation, "to solve the problem of the origin of these ligatures, and still more of their application."

Dr. Simpson, of Edinburgh, (*Dub. Med. Journ.*, Nov., 1836, vol. x. p. 220.) sustains Montgomery in his views, and like him, regards the agent in these spontaneous amputations to be an "*organized lymph*," the result of an inflammatory action, occurring in the fetal state, which not only produces the special deformity now under consideration, but also other monstrosities, diversified as we know them to be, and recorded in that most interesting and industrious work of Geoffroy de St. Hilaire, *Monstruosités Humaines*. We also know that the fœtus is subject to a variety of diseases while a tenant of its temporary prison, and the authorities are laboriously collated in the excellent monograph by *Dr. Roberts* to which I have already alluded.

Having seen that this *spontaneous amputation* does occur, both from causes unaccountable as well as from such influences as we have reason to believe were exercised upon the integrity of the tissues by those ligamentous bands to which I have referred, the inquiry now remains:—*Can the umbilical cord, by its devious distribution, so arrest the circulation, and thus the vitality of a fetal limb, as to separate during gestation from the body?*

I am disposed to answer affirmatively. *First*. Because the mutilation has occurred, inexplicably as well as mechanically, and under such peculiar conditions as to preclude the idea of congenital deformity; and, *secondly*, Because, cases are recorded where the umbilical cord has been found coiled around the limb, accompanied with such a depressed and indented state of the subjacent texture as to warrant the twofold conclusion, that cases where a separation had been effected, were doubtless due to this cause; and where no separation had as yet been accomplished, to leave a very rational inference of its liability, and the stricture been much longer continued. We are acquainted with the power exercised by ligatures upon polypi and other excrescences, which leaves little room to doubt a similar effect upon the delicate, semi-osseous texture of the fetal limb.

I shall close this essay by offering, in addition to the specimen upon your table, the history of a few cases *where the cord was found entwining the limb of the fœtus in utero*.

In 1835, *Dr. Adams* sent a specimen to Dr. Montgomery in which the umbilical cord coiled around the left leg of a fœtus in its third month.

The limb was deeply indented, and shortly after this, a case occurred in the practice of Dr. Montgomery himself, (see his work *passim*), where the cord was entwined around the left limb just above the knee. The fœtus was at its third month.

Morgagni (*Alexander's Translation*, Epist. 48, Art. 53, vol. ii. p. 758), records the case of a fœtus between the fifth and sixth months, in which there was a great deformity, especially the feet, but *the left leg was broken*, and he is unequivocally of opinion that it resulted from the binding of the cord around the child's leg.

Roberts (*Oper. citat.*, p. 383), refers to a case recorded in *Siebold's Journal*, vol. xvi. No. 2, of the umbilical cord being coiled around the right leg of a fœtus three months old, forming a knot. The development of the leg was prevented, and *worn down to the bone, the integuments remaining unaltered*.

Dr. Buchanan (*Amer. Journ. Med. Sci.*, Aug., 1839, p. 522), gives the case of a fœtus four months old. The umbilical cord was singularly twisted around the *neck and thigh*, by which both motion and circulation were impeded. At the point of compression, "nothing more than the integuments intervened betwixt the cord and the bone." Below, the limb was perfectly developed.

The latest case to which I have had access, is one reported by *Dr. Griscom*, of New York, (*New York Journ. Med.*, Jan., 1845.) The lady supposed herself in the eighth month of gestation. Sudden causes produced abortion, and she expelled an ovum containing a fœtus between three and four months old. The umbilical cord longer than usual, *wound around the leg nearly a dozen times*, "as closely as a thread upon a spool."

The authorities and examples which I have cited, are sufficient, I think, to warrant the question which I have proposed to the society, as to what would have been the result in the case of the preparation before them, had not the fœtal growth been arrested by a premature death. From the array of evidence I am bound to conclude that a separation of the limb would have been produced, by that process which has so appropriately been called a "*disjunctive atrophy*." And this supposition is by no means groundless, if we only refer to *Siebold's* case, where the leg "was worn to the bone," and to the declaration of *Dr. Buchanan*, who says in reference to his case, "had the child lived long enough, spontaneous amputation would have been the result." This also was *Béclard's* opinion.

ART. III.—*Report of some Operations performed during a late cruise in the Pacific*. By NINIAN PINKNEY, M.D., Surgeon, U. S.N., (Communicated through Dr. THOMAS HARRIS, Chief of the Bureau of Med. and Surg., U. S.N.)

CASE I. *Removal of a third of the head of the humerus*.—John R. Burden, the subject of this case, aged 17, was discharged from on board the American whale ship *Golconda*, in the month of Nov. 1841, and sent to the hospital at Lima under the charge of Dr. McLean. Ten months from the date of his entrance into that institution, he came to Callao, by